



LOUDOUN COUNTY FIRE MARSHAL'S OFFICE 2008 ANNUAL REPORT



*Teamwork * Integrity*
*Professionalism * Service*



FIRE MARSHAL'S OFFICE

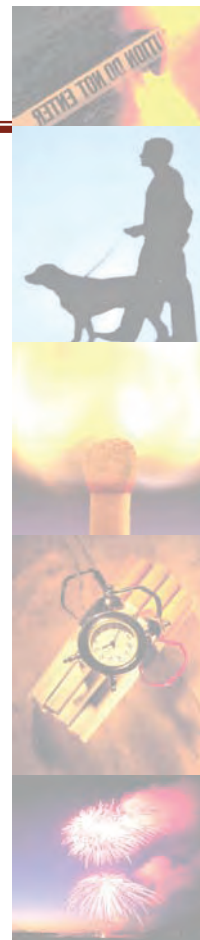
MESSAGE FROM THE CHIEF FIRE MARSHAL

On behalf of the Department, I am pleased to present the 2008 Annual Report for the Loudoun County Fire Marshal's Office. This report represents a summary of the key accomplishments of the office over the last 12 months.

2008 was a busy year for the Department of Fire, Rescue and Emergency Management and for the Fire Marshal's Office. While the actual number of fire investigations remained fairly constant, damage to property exceeded \$12 million, which was a 22% increase in reported loss when compared to 2007. Most of the fires continue to occur in residential structures. Thanks to information now available through a new "in house" fire investigations data base, staff is better able to track fire performance and outcome. Several significant fires occurred during the spring and summer months, and our data points largely to carelessness related to cooking and smoking. To that end, the Public Fire and Life Safety Education program is enhancing public fire safety outreach efforts toward home fire safety through the development of seasonal fire safety press releases and live cable television broadcasts. In addition, a "door to door" smoke alarm program was developed and is being piloted in Purcellville. This joint career-volunteer project will target some 900 older homes in and around the town for smoke alarm installation, testing and replacement. These efforts supplement the current fire and life safety education programs aimed at the very young and the elderly.

Demand for fire safety inspections continues to increase as the inventory of buildings within the county is still growing, despite the national economic slowdown. Inspections are prioritized according to the degree of potential for life loss - the greatest hazard being "public assembly" buildings, such as schools, restaurants, meeting halls, churches and theatres. Over 600 such buildings were identified in 2008 as requiring annual inspections. This is in addition to the many other buildings and structures with hazardous operations that require inspections, such as gas stations, mercantile locations and industrial buildings. In 2008, 2,577 fire safety inspections were conducted.

The office is also involved with efforts to ensure safety with commercial blasting operations and the use of fireworks. In 2008, approximately 125 inspections were conducted at various commercial blasting locations, supplemented by another 230 inspections of commercial blasting transport vehicles and explosives storage locations



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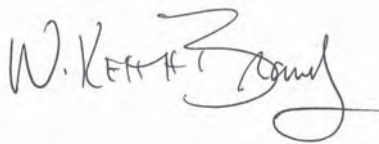
throughout the county. Public perception of commercial blasting operations often results in complaints that require immediate and thorough investigation by the office to ensure compliance with the many federal, state and local regulations. In addition, inspections of consumer fireworks retail locations and public fireworks display locations typically result in corrective measures or arrests to ensure public safety. Unfortunately in 2008, as in most other years, a fire or serious burn injury has to serve as a reminder that all fireworks can be dangerous.

Fire investigation efforts were enhanced this spring with the addition of "Jimmy", a canine who specializes in the detection of "ignitable liquids" - gasoline and fuel oils - often maliciously used to start fires. Jimmy and her six week training program were provided free to the citizens of Loudoun County through a cooperative agreement with the Bureau of Alcohol, Tobacco, Firearms and Explosives (BATF). Jimmy supplements the office's existing explosives and human scent detection canine program.

Finally, the office is responsible for the joint operation and management of the combined Fire Marshal's Office/Sheriff's Office Bomb Squad. Accredited through the Federal Bureau of Investigations, the Bomb Squad operates primarily with federal grant funding and is mandated to respond locally and regionally to incidents and threats related to Improvised Explosives Devices (IED's). The office has been selected by the Council of Governments Fire and Police Chiefs Committee to manage the 2007 Urban Area Security Initiative regional bomb squad grant that is providing "first responders" from the eight state and local bomb squads with comprehensive diagnostic and mitigation equipment.

In closing, 2009 promises to be another year of continued improvement toward our fire and life safety goals.

Sincerely,



W. Keith Brower, Jr.
Chief Fire Marshal



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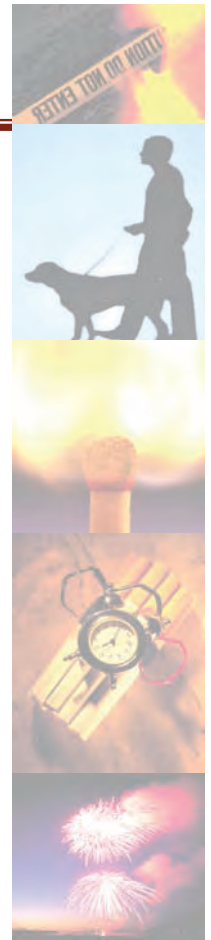
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**FIRE MARSHAL'S OFFICE
MISSION STATEMENT**

The Fire Marshal's Office seeks to provide a safe living and working environment for residents, workers and travelers within Loudoun County. Key aspects of the mission include:

- Proactive Public Fire and Life Safety Education programs
- Reduction of fire risk through abatement of common fire prevention code violations
- Rapid and professional emergency response

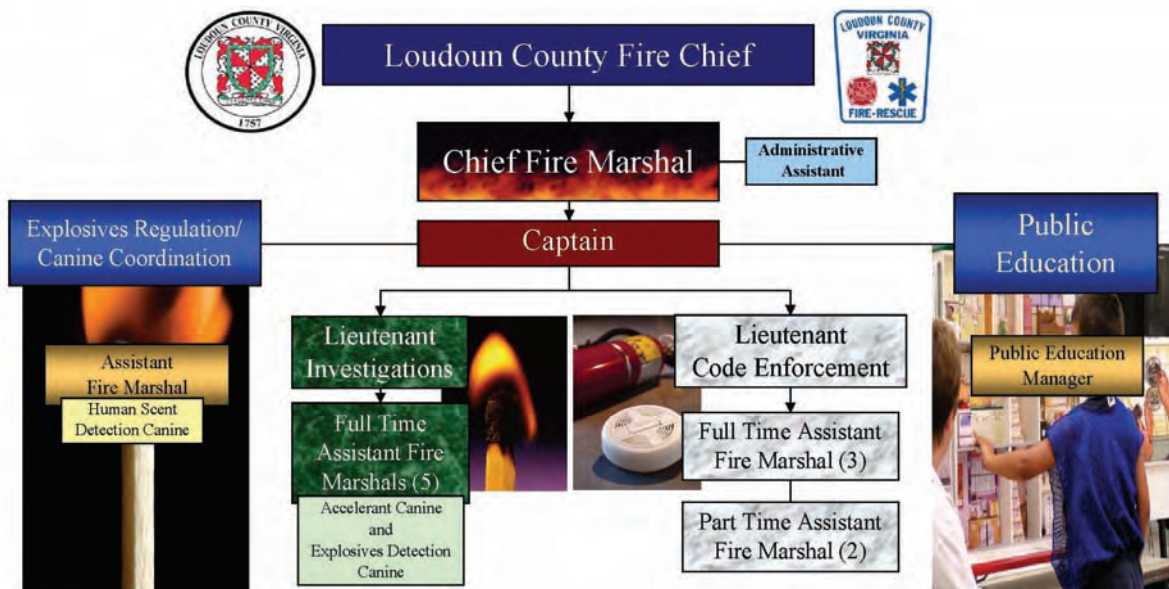


FIRE MARSHAL'S OFFICE

FIRE MARSHAL'S OFFICE BUDGET

The Fire Marshal's Office is comprised of 17 personnel - 13 full time and 2 part-time sworn law enforcement officers, 1 civilian Public Education Manager and 1 Administrative Assistant.

The Fire Marshal's Office is organized into three primary sections- public fire and life safety education, fire prevention code enforcement and investigations. There are several special operational programs, such as the bomb squad and the canine program, however these are collateral responsibilities assigned to regular staff which transcend section boundaries.



FIRE MARSHAL'S OFFICE

The FY 09 budget for the office is \$2,003,000. The Fire Marshal's Office is able to issue fee based fire permits for certain hazardous uses.

In FY 2009 this amount is expected to be \$82,000, which is used to partially offset required local tax funding.

Program Financial Summary	FY 2006 Actual	FY 2007 Actual	FY 2008 Actual	FY 2009 Adopted
Expenditures				
Personnel	\$1,317,074	\$1,447,367	\$1,579,808	\$1,590,000
Operations & Maintenance	234,007	653,697	672,065	413,000
Capital Outlay & Capital Acquisitions	0	130,180	144,873	0
Total Expenditures	\$1,551,081	\$2,231,244	\$2,396,746	\$2,003,000
Revenues				
Permits Privilege Fees & Reg Licenses	\$82,765	\$77,570	\$92,985	\$82,000
Fines & Forfeitures	5,140	3,815	6,541	7,000
Recovered Costs	0	358	1,145	0
Federal Categorical Aid	0	0	0	0
Total Revenues	\$87,905	\$81,743	\$100,671	\$89,000
Total Local Tax Funding	\$1,463,176	\$2,149,501	\$2,296,075	\$1,914,000



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TRAINING AND CERTIFICATION REQUIREMENTS FOR SWORN PERSONNEL

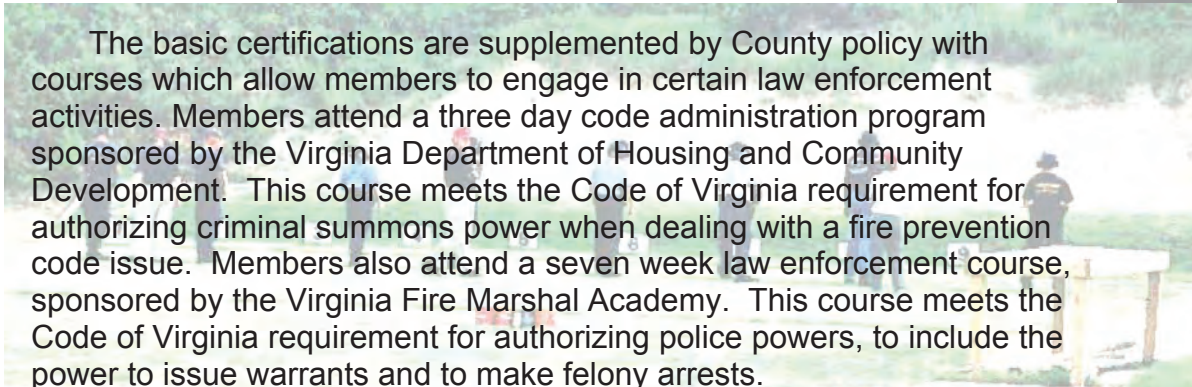
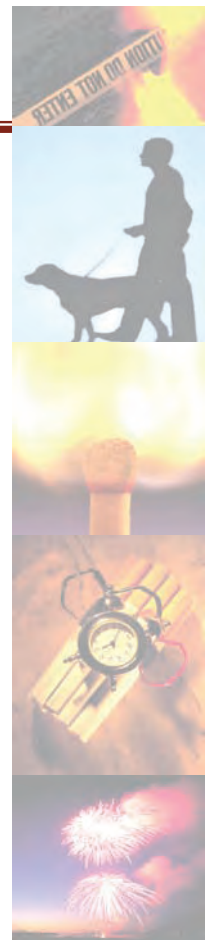
The sworn members of the Fire Marshal's Office possess dual certification as Fire Inspectors and Fire Investigators, with law enforcement authority pursuant to §27-34.2:1 of the Code of Virginia. This attribute allows maximum flexibility in covering work shift requirements and it also allows the transfer of members between fire prevention code enforcement and investigations in a seamless fashion. This is desirable in order to ensure proficiency of skills among all sworn members.

In Virginia, certification as a Fire Inspector and a Fire Investigator is attained by successful completion of National Fire Protection Association (NFPA) courses, combined with successful completion of practical skills. Each NFPA course requires 2 ½ weeks of class contact. In order to maintain Fire Inspector certification, 16 hours of continuing education is required bi-annually. In order to maintain Fire Investigator certification, 40 hours of continuing education is required bi-annually.

The basic certifications are supplemented by County policy with courses which allow members to engage in certain law enforcement activities. Members attend a three day code administration program sponsored by the Virginia Department of Housing and Community Development. This course meets the Code of Virginia requirement for authorizing criminal summons power when dealing with a fire prevention code issue. Members also attend a seven week law enforcement course, sponsored by the Virginia Fire Marshal Academy. This course meets the Code of Virginia requirement for authorizing police powers, to include the power to issue warrants and to make felony arrests.

In addition to basic certifications, members are encouraged to pursue advanced certification training. This training is beneficial to the provision of expanded member capabilities and vital collateral services. Some of the prominent advanced certifications include:

CERTIFIED FIRE INVESTIGATOR: The Certified Fire Investigator (CFI) Program is a voluntary certification program administered by the International Association of Arson Investigators. The goal of the CFI program is to acknowledge demonstrated competence in the field of fire investigation. Once successfully completed, the CFI program is a significant distinction that acknowledges an individual's demonstrated competency in all phases of fire investigation through completion of a



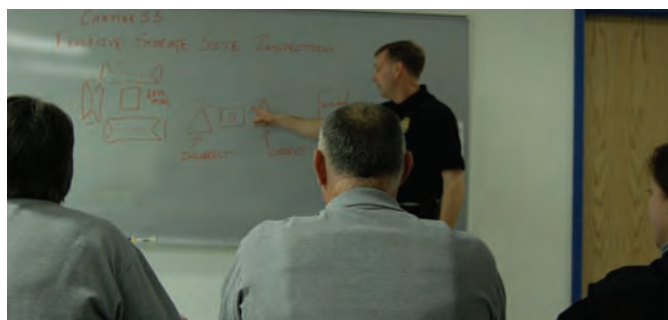
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detailed application and written examination process. **2 members of the Fire Marshal's Office have attained this valuable certification.**

CERTIFIED FIRE AND EXPLOSIVES INVESTIGATOR: The Certified Fire and Explosives Investigator (CFEI) Program is a voluntary certification program administered by the National Association of Fire Investigators. The goal of the CFEI program is to acknowledge competence in the field of fire and explosives investigation. The program requires proficiency and competency in all phases of fire and explosives investigation through completion of a detailed application and written examination process. Successful candidates are required to maintain certification through continuous education in the field of fire and explosives related investigations. **5 members of the Fire Marshal's Office have attained this valuable certification.**

CERTIFIED BOMB TECHNICIAN: The Federal Bureau of Investigations (FBI) is responsible for the training and oversight of civilian (non-military) bomb squads. Loudoun County has formed a joint Fire Marshal's Office/Sheriff's Office bomb squad as a resource for local emergency incident response. The ten certified bomb technicians (five from the Fire Marshal's Office and five from the Sheriff's Office) perform this work as a collateral duty. They are required to have 16 hours of continuing education monthly, 40 hours of specialized training annually and they must attend a 40 hour recertification course at the Hazardous Device School every three years.

CANINE HANDLER: The Fire Marshal's Office utilizes three specialty canines in order to provide expanded services to the community. These services are explosives detection, accelerant detection and human scent detection. Each canine and their handler are required to achieve certification according to the standards of the discipline. For example, the accelerant detection canine is required to successfully complete a six week program meeting the Bureau of Alcohol, Tobacco, Firearms and Explosives (BATF) standards. The standards require one hour of daily training and exercise and a 40 hour annual recertification training program.



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PUBLIC FIRE AND LIFE SAFETY EDUCATION



The Public Fire and Life Safety Education section is involved in a variety of programs throughout the year. In 2008, a "door to door" smoke alarm program was launched as a pilot effort in the town of Purcellville. The program, entitled "Put a Finger on It," is a cooperative effort between the career and volunteer membership of Purcellville Station #2. Nationally, 75% of fire deaths and injuries occur in the residence, and many of these locations have no smoke alarms or smoke alarms

that are not functioning properly. The goal of the program is to ensure working smoke alarms on each living level of a residence. Fire station personnel are conducting smoke alarm inspections, replacing batteries and, where needed, installing new alarms. Of note is the availability of smoke alarms for the hearing impaired. All of these activities are performed at no cost to the resident. Free home fire safety checks are also offered as part of this program. It is intended that the program will be formally expanded countywide over time.



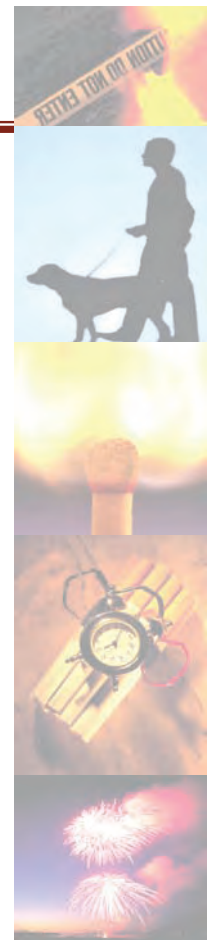
In addition, the Public Education Manager coordinated and delivered other invaluable programs in 2008:

The McGruff Safety Camp: In coordination with the Loudoun County Sheriff's Office, this summer camp for 4-6 year olds covers numerous safety lessons including fire safety and prevention, bike safety, helmet safety, stranger danger and poison safety. **In 2008 the program was expanded from 3 to 6 camps, with 324 children attending.**

The Life Safety Trailer: Acquired through a federal grant program, the trailer is used to teach families about the importance of smoke alarms, home fire



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escape planning and severe weather emergencies. **In 2008, the trailer was used at 12 locations across the county with approximately 2,000 visitors.**

The Child Passenger Safety Seat program: This program teaches fire and emergency medical services personnel to inspect and install safety seats at stations throughout the county. **In 2008, 2,239 car safety seats were inspected.**



The Child Passenger Safety Seat DVD: This DVD, entitled A Safer Journey..., instructs parents on the procedures to safely install a child safety seat. It was produced thanks to funding from The Allstate Foundation. 5,000 DVD's were produced and are available to families through Inova Loudoun Hospital and Allstate Insurance agencies in the county. **This project won an award from the Loudoun County Fire and Rescue Commission in 2008 for significant contributions to the progress of the Fire and Rescue System.**

9-1-1 simulator: Reaching over 800 children in 2008, this program teaches children the steps needed to access emergency help from their home or cell phone. Children receive hands on experience dialing 9-1-1 and answering the important questions that a dispatcher would ask during an emergency.



Ryan Meyer receiving recognition for calling 911 in an emergency situation.

File of Life: Funded by a grant from the Allstate Foundation, this program provides emergency personnel with pertinent, life saving information about a patient, such as past medical history, current medications, allergies and emergency contacts. **File of Life packets are**



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distributed at no cost to senior citizens throughout the county.

Senior Safety- This includes a variety of programs aimed a senior citizens to promote fire safety and fall/injury prevention in their home.

Head Start: This is an ongoing partnership between the Department and the local Head Start office that began almost ten years ago. In 2008, the program reached **100 at risk families** by providing them with smoke alarms, carbon monoxide alarms, booster seats for any child enrolled in the head start program and life safety education including the 9-1-1 simulator and the Hazard House program.

Let's Talk Babies/Toddlers: This program is done in conjunction with Inova Loudoun Hospital and is offered to expectant parents and parents of toddlers six times per year. **Over 400 parents attended in 2008** and were taught important information about child passenger safety such as choosing an appropriate seat for their child, how to correctly install their seat, and traveling safety for their child.



Data courtesy U.S. Fire Administration and Virginia Department of Fire Programs.

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FIRE PREVENTION CODE ENFORCEMENT

Fire safety inspections are conducted pursuant to authority granted in the Code of Virginia. Loudoun County adopted the "Virginia Statewide Fire Prevention Code" in the early 1990's and codified it as the Loudoun County Fire Prevention Code. The Loudoun County Fire Marshal, and sworn assistants, are granted local authority to enforce the provisions of the fire prevention code, to include local amendments, within the county and the seven incorporated towns, in accordance with §27-97 of the Code of Virginia. The code also provides that localities may charge permit fees to defray the costs of inspections for certain types of buildings and operations. **In 2008, \$86,424 was generated by the issuance of 1034 permits.**

The goal of the Fire Prevention Code Enforcement section is to ensure public safety through compliance with various fire safety regulations. **In 2008, there were no reported fire deaths to either the public or to emergency response personnel.** The common hazards noted during regular fire safety inspections include blocked exits, overcrowding, storage quantity and height, improper use of extension cords and non-working emergency lighting.

The Fire Marshal's Office prioritizes inspections by potential for injury or loss of life. Public assembly buildings, to include restaurants, meeting halls, churches, tents and restaurants, as well as public and private educational facilities, represent the greatest threat to life safety. These are followed by inspections for institutional buildings, such as hospitals and correctional facilities, factory and industrial buildings, locations using, storing or selling extremely hazardous substances (EHS), flammable and combustible liquids and liquefied petroleum gas (LPG). The Fire Marshal's Office is also mandated by the Code of Virginia to issue permits for operations involving the transportation, storage and use of commercial explosives. **In 2008, 2,577 fire safety inspections were completed.**



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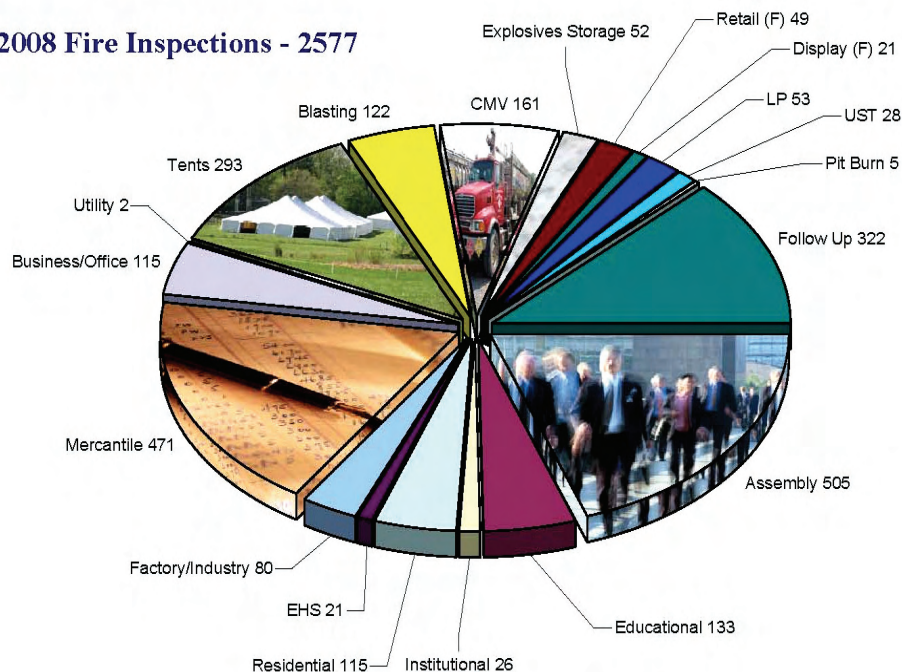
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The Fire Marshal's Office also conducted specialized inspections for seasonal hazards in 2008:

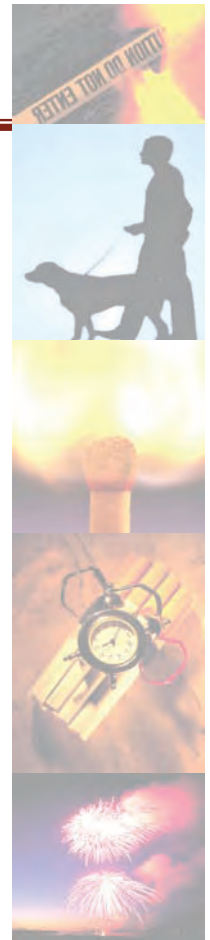
- The July 4th holiday resulted in inspections for approximately 30 retail ("permissible") fireworks sales locations and 13 public fireworks display locations.
- The Night Life Safety Inspection program, which was implemented in 2004, provided 515 regular checks of bars and nightclubs, which tend to become overcrowded during weekend and holiday periods. This program focuses on ensuring that the life safety components of a building (primarily exits, fire extinguishers and crowd management) are intact during high occupancy periods.
- 2,229 holiday mercantile checks were performed, primarily in shopping malls and big box stores, which also tend to become overcrowded during peak holiday shopping periods.

Finally, the Fire Marshal's Office coordinated and provided oversight to the Operations Division for the Engine Company Inspection program. These inspections cover lower risk "common area" multi-family residential structures and strip mall type commercial occupancies. This project has a significant dual benefit - the inspections help ensure public safety, and the station personnel who perform them become intimately familiar with buildings in their primary service districts.

2008 Fire Inspections - 2577



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PLANS REVIEW

The Fire Marshal's Office in conjunction with the Planning and Facilities Services Division, is tasked with the review of construction site plans. The objective of careful and concise review is to identify design deficiencies that could result in operational emergency response issues once a project is completed. Many of the design issues corrected during review have to do with emergency vehicle access to a building or a community. **In 2008, the Fire Marshal's Office assisted in the review of 36 new development projects.**

A related function performed in the office is the review of fire lane plans for compliance with the fire prevention code and the Loudoun County Facilities Standards Manual. The fire prevention code authorizes the fire code official to designate public and private fire lanes as deemed necessary for the efficient and effective operation of fire apparatus. This function has been delegated to the Department of Building and Development as a means to streamline review of new construction. During pre-construction plans review, fire access roadway design is evaluated to ensure that fire apparatus can effectively operate. Sometimes, however, despite the best review, roadways are built without sufficient access width or existing community parking patterns change, resulting in fire apparatus access problems. This requires the Fire Marshal's Office to conduct a formal review of the roadways to require retro-active fire lanes marking and signage. **In 2008, 152 fire lane reviews and inspections were completed.**



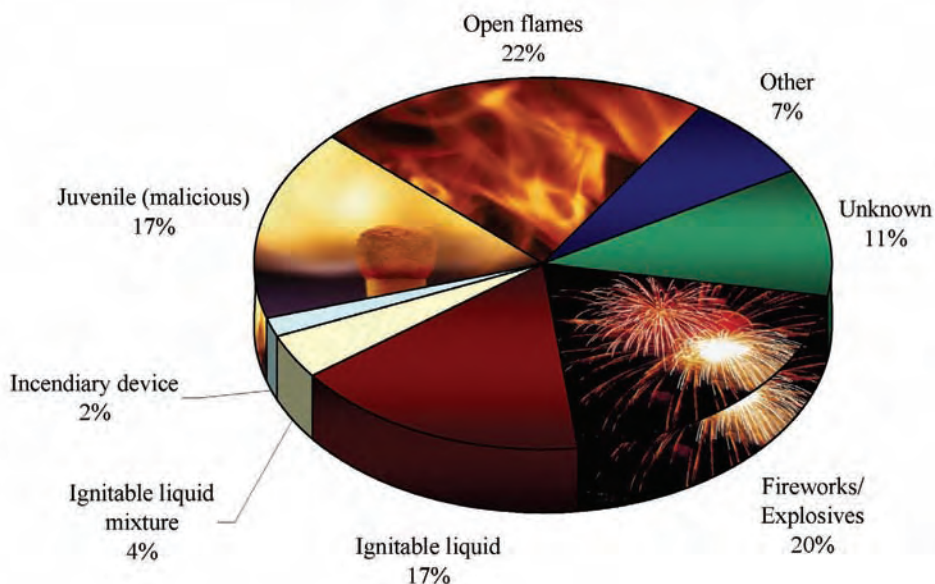
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INVESTIGATIONS

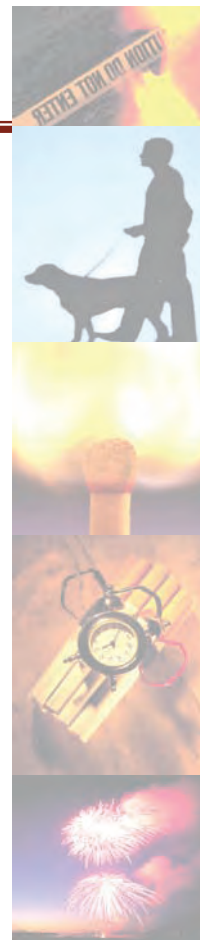
Pursuant to §27-31 of the Code of Virginia, all fires and explosions are mandated to be investigated for the purpose of establishing the cause. Fire and explosion cause determination is needed for many reasons. A fire may be set intentionally; this constitutes incendiary fires, which are crimes against the state and can result in criminal prosecution as either a misdemeanor or a felony. A fire or explosion may occur unintentionally by way of a human act or equipment malfunction. This would be an accidental event which, through investigation, may determine the need to increase public awareness to prevent a future occurrence or to identify product deficiencies which require redesign. A fire can result by way of nature's process, such as a lightning strike to a barn. And, in some cases, the actual combination of a fuel and a heat source nor its location can be determined. These fires are classified as undetermined.

Each year there are numerous fire related incidents that occur. Not all are reported to the Fire Marshal's Office. Department policy requires the Fire Marshal's Office to respond whenever a reported fire results in damage greater than \$50,000, is believed to be incendiary in nature, results in a human burn or fatality or involves government property. **In 2008, 276 fire and related incidents required the response of the Fire Marshal's Office. These investigations resulted in over 2,300 follow up and support activities.** The cause determination breakdown is listed below:

2008 Reported Incendiary Fire Causes



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2008 Closed Incendiary Cases

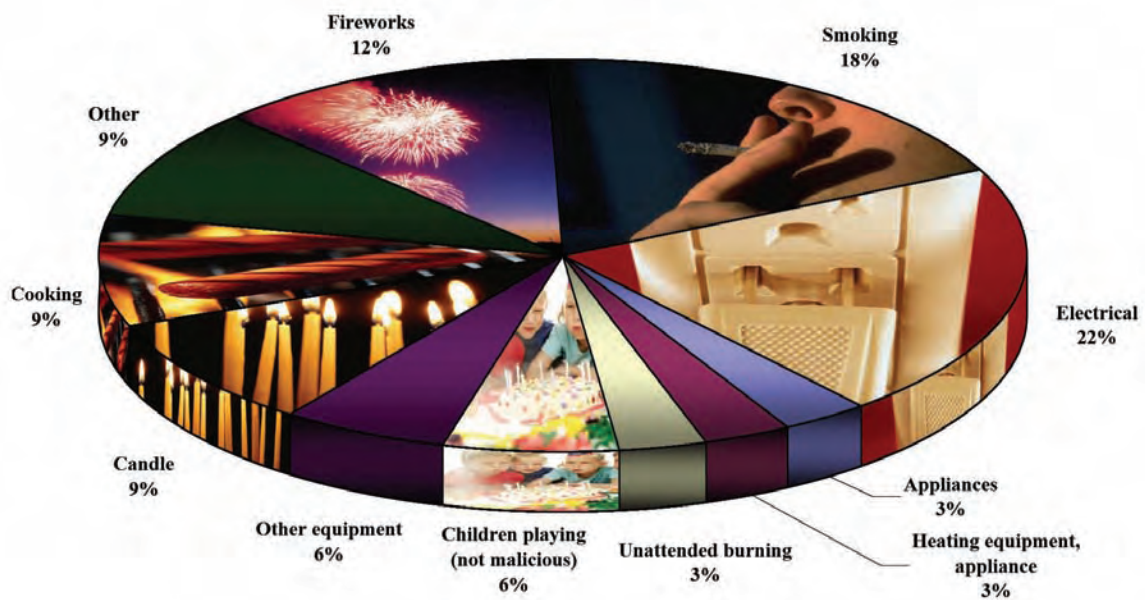
Juvenile Fire
Setters
and Restorative
Justice
27%

Arrests
40%

Exceptional*
33%

*Death of offender, prosecution declined, extradition declined, refused to cooperate, juvenile

2008 Reported Accidental Fire Causes



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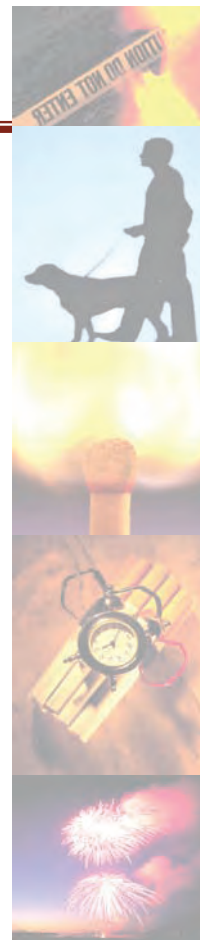
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During the analysis of fires and explosions, causal factors are important to identify. The source of heat and the first material ignited help to confirm where and how a fire started. Some fires result from equipment which may have malfunctioned or have become damaged. Others are the result of human behaviors. Fire Marshals are trained in the preservation and collection of crime scene evidence. Evidence is sent to the Virginia Department of Forensic Science for analysis. The laboratory analyzes fire debris for ignitable liquids and identifies chemical compounds used in explosives and chemical improvised explosives devices. The Loudoun County Sheriff's Office CSI section also provides additional forensic support to the Fire Marshal's Office.

The information that is derived from an investigation may point to a need to educate the public or to demonstrate to an equipment manufacturer certain design defects that require correction. The office, through the use of a new investigations database, collects data on these causal factors as well as the location where significant residential fires have occurred, as residential fires account for 75% of fire deaths and injuries nationally each year. This information is being used to proactively focus current public fire and life safety education programs in Loudoun County.

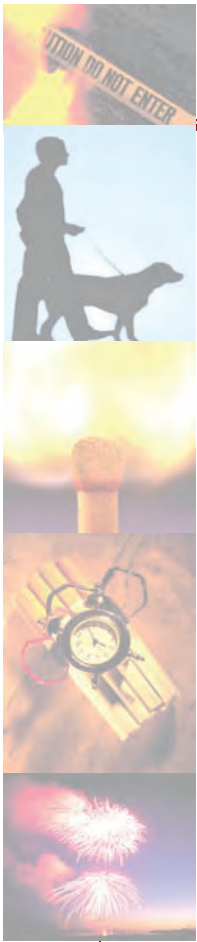
The ability to achieve case disposition is an important measure of efficiency for the Fire Marshal's Office. Further, case disposition can result in the arrest of a criminal or the knowledge of a careless practice or equipment deficiency which, through education, can reduce the potential for future fire events. All members of the Fire Marshal's Office are certified to conduct fire investigations. In some instances, the responding initial shift investigator is able to quickly determine fire cause before the end of the work shift. Other times, however, the case may be complicated or require analysis and interviews that may take days or weeks to complete. In these cases the investigation is moved to a non-shift investigator who is able to provide on-going continuity and coordination of effort.

The Fire Marshal's Office uses the investigations database as a means to improve tracking and overall progress on an incident investigation. The database can track an investigation to ensure it is receiving timely and regular follow up, given the regular addition of new cases to the existing workload. Cases do not get "lost" and the data allows the supervisor to monitor all caseload to ensure emphasis remains with the highest priority cases. **In 2008, the Fire Marshal's Office achieved an 82% overall case closure percentage. For criminal cases, the Fire Marshal's Office achieved a 32% case closure percentage, which is well above the FBI national average of 18.7%.**



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Origins in Structure Fires 2008



Data collected by Loudoun County Fire Marshal's Office

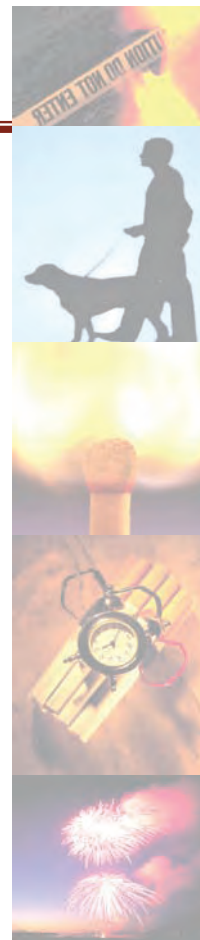
Floor plan artwork: courtesy of the Florida State Fire Marshal's Office



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The Fire Marshal's Office participates in multi-agency investigations, both locally and regionally. Certain investigations require staffing resources in excess of budgeted personnel, or multiple levels of investigative specialty. For this reason, the Office formed the Loudoun County Fire Investigations Task Force, in conjunction with the Loudoun County Sheriff's Office, Virginia State Police, police departments within the Towns of Leesburg and Purcellville and the Bureau of Alcohol, Tobacco, Firearms and explosives (BATFe). This task force is able to muster a large response force, which contributes greatly to the efficiency of a complex investigation. It is activated locally for a large loss incident or whenever a fire death or significant fire related injury occurs. The Fire Investigations Task Force was utilized on the May 2008 Meadowood structure fire incident where several emergency responders were seriously injured. Team members assisted with scene security, evidence collection, processing of damaged personal protective equipment, neighborhood interviews and photography. The Fire Marshal's Office has also been a participating agency in the BATFe Northern Virginia Investigations Task Force. Presently, two investigators are sworn as Special Deputy United States Marshals and are assigned to the Task Force on an as needed basis.



2008 CASES OF INTEREST

Commercial Building Fire 97 Sugarland Run Drive 1-10-08

The Fire Marshal's Office responded to the scene of a commercial building fire at a laundromat in the Sugarland Run area of Sterling. The loss was estimated at \$650,000.00. The fire originated in the back area of the laundromat. The cause of the fire was listed as undetermined due to multiple factors.



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House Fire

43238 Meadowood Court, 5-25-08

The Fire Marshal Office's responded to the scene a of structure fire located at Meadowood Court in Leesburg. The single family home was considered a total loss estimated at \$600,000.00. The fire scene investigation consisted of a two day operational period. The Loudoun County Fire Investigation Task Force was activated for this incident due to the large loss and multiple severe injuries to responding fire crews. The cause of the fire was improper disposal of smoking materials.



House Fire

18434 Rim Rock Circle, 6-28-08

The Fire Marshal Office's responded to the scene of a structure fire located at Rim Rock Circle in Leesburg. The fire in the single family home caused damage estimated at \$760,000.00. The cause of the fire was a young child playing with matches.



House Fire

18408 Lanier Island, 7-19-08

The Fire Marshal Office's responded to the scene of a structure fire located at Lanier Island, Leesburg. The fire in a single family home caused severe damage to the house of origin and to houses located on either side. The total loss for all three structures was estimated at \$400,500.00. The cause of the fire was careless use of fireworks.



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Commercial Building Fire 22680 Biedler Drive, 7-25-08

The Fire Marshal's Office responded to the scene of a commercial building fire at the Ritz Carlton Golf Course. The structure, a storage building for golf course maintenance equipment, was considered to be a total loss estimated at \$4.2 million. The fire cause was listed as undetermined due to the severe destruction caused by the fire.



Burn Injury Brethour Court, 6-30-08

The Fire Marshal's Office responded to a report of a severe burn injury to a child in the Brethour Court area of Sterling. The young child received second and third degree burns to his arms and torso. It was determined that the young child had purchased unapproved fireworks from a vendor in an ice cream truck. Fire Marshal's scoured the area of Sterling, searching for the appropriate ice cream truck. Investigators were successful in locating and arresting the vendor for multiple violations of the fire prevention code.



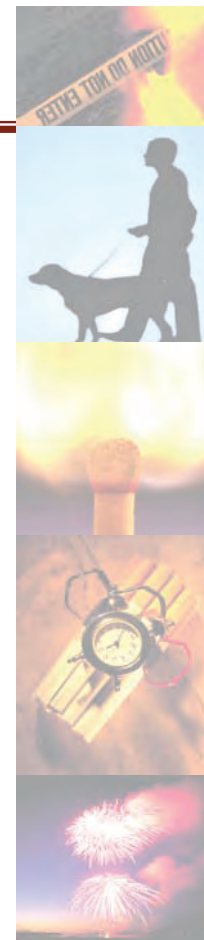
Other significant fires in 2008:

February 20, 2008 Structure fire at 46024 Bayswater Terrace
Loss: \$200,000 - Cause: Accidental

February 28, 2008 Structure fire at 46026 Bayswater Terrace
Loss: \$450,000.00 - Cause: Undetermined

May 17, 2008 Structure fire at 37098 Charles Town Pike
Loss: \$70,000.00 - Cause: Accidental-Cooking

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May 27, 2008 Structure fire at 45547 Reading Terrace
Loss: \$100,000.00 - Cause: Accidental-Smoking materials

June 10, 2008 Barn fire at 36502 Kidwell Road
Loss: \$ 500,000.00 - Cause: Natural – Lightning

August 11, 2008 Structure fire at 40396 Quarter Branch Road
Loss: \$350,000.00 - Cause: Accidental-Stove left on

October 15, 2008 Structure fire at 22875 Brambleton Plaza
Loss: \$50,000.00 - Cause: Incendiary-Juvenile

October 31, 2008 Bus fire at 109 Bailey Lane
Loss: \$100,000.00 - Cause: Incendiary

December 15, 2008 Structure fire at 14897 Clover Hill Road
Loss: \$475,000.00 - Cause: Accidental - Faulty Christmas Decoration

MOBILE INVESTIGATIONS UNIT

In 2006 the Office received authorization from the Department of Management and Financial Services to replace the current mobile investigations unit, a 1990 Chevy step van. The original unit was purchased and then customized in house by the staff of the Fire Marshal's Office. The unit had a small amount of storage space to house tools and equipment inside the vehicle, and a small work area in the rear of the unit. When planning began on the new unit objectives were set for the final product. The first objective was that storage space should accommodate all the current tools and equipment carried and allow for future items to be added. Secondly, the equipment and supplies should be stored in an orderly manner. Another objective is that a conditioned work space would allow for rehabilitation of crews working in extreme heat or cold. The chassis needed to be upgraded to four wheel drive capability in order to access off road incident scenes as well as respond during adverse weather conditions.

The new unit will be housed on a Ford F350 dual rear wheel four wheel drive chassis. It will carry an assortment of tools ranging from hand digging tools and shovels to cord reels, explosive gas meters, and portable quartz lights as well as photographic scale kits, fingerprinting equipment, and evidence packaging supplies. The body is a 12' walk-in box with heat and A/C in the rear work area along with lighting. This space facilitates evidence processing and rehabilitation for investigators. The vehicle has six exterior compartments providing more than adequate space to store

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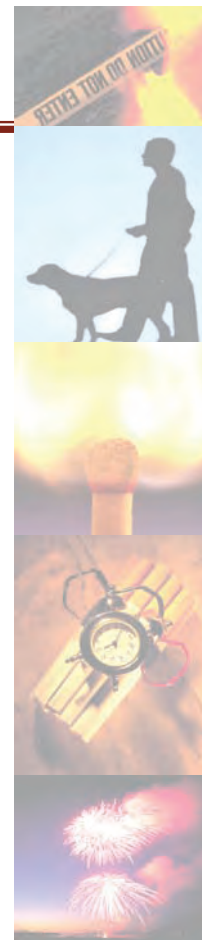
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tools and supplies in an organized manner. The compartments are internally illuminated to assist the investigator in working more efficiently at night. A 7.5 kilowatt generator is installed on the vehicle, which utilizes the chassis fuel system as its fuel source. By having its own scene lighting capability, investigators will have to rely less on fire companies remaining on the scene to provide this service.

Major cost cutting efforts were used during production - fiberglass reinforced plywood was used to construct the rear box of the unit in lieu of aluminum, saving approximately 50% in cost. This resulted in the ability to use a less expensive, lighter duty chassis. The total cost of the fully equipped unit is \$80,000.

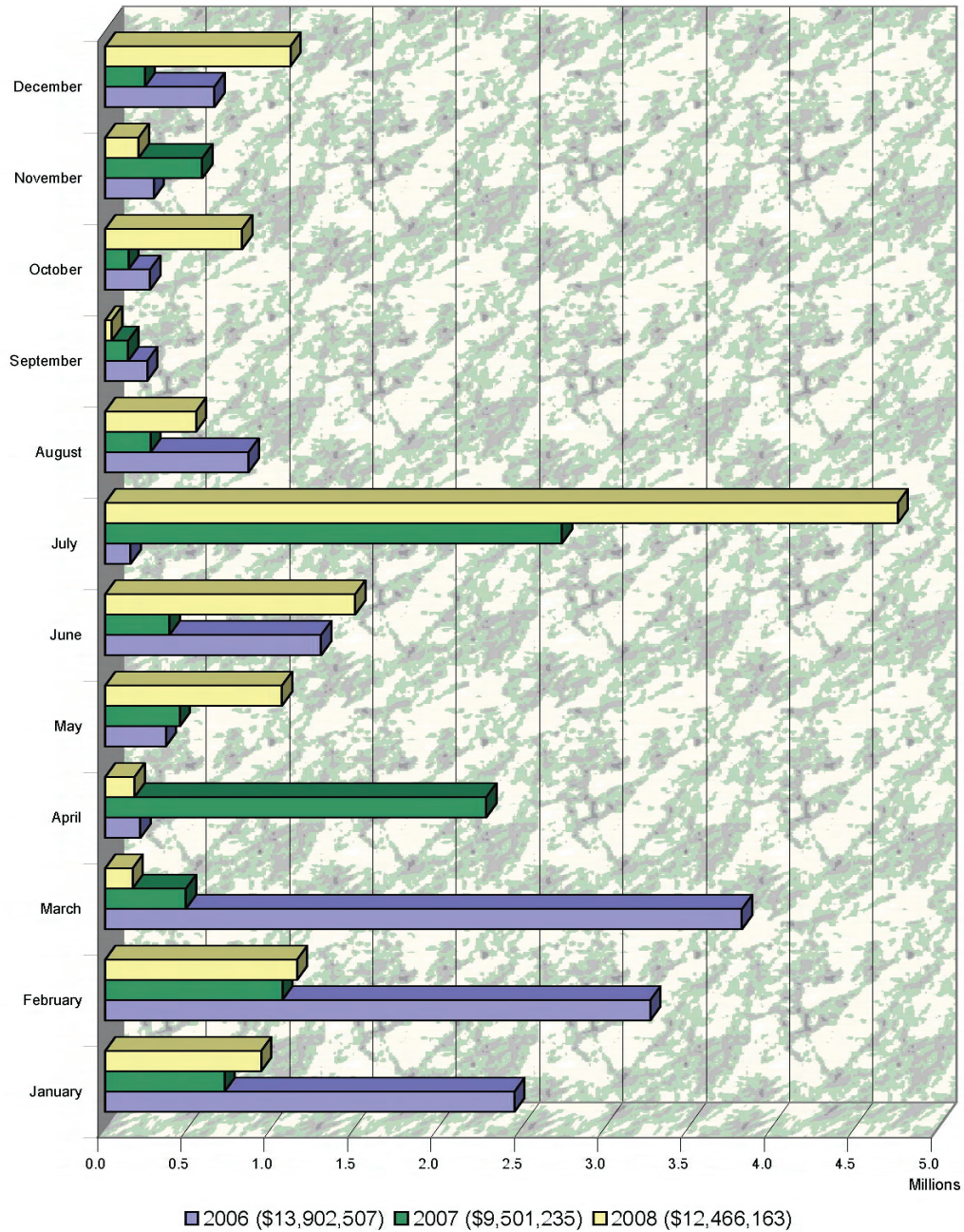


Photo: courtesy of Supreme Specialty Vehicles



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2006-2008 Estimated Fire Loss



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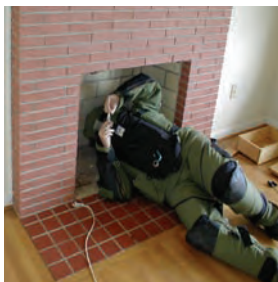
BOMB SQUAD

In the late 1990's regional public safety discussions within the National Capitol Region (NCR) focused widely on terrorism. At the same time, due to the unparalleled increase in the use, handling, storage and transportation of commercial explosives by the construction industry, Loudoun County realized it had no local capability to handle an explosives related incident, accidental or otherwise. It was further revealed that the military explosives ordnance units in the region would be available only for munitions disposal, not those involving commercial explosives and Improvised Explosives Devices (IED's). In 1999, the County Administrator authorized the formation of the Loudoun County Bomb Squad.

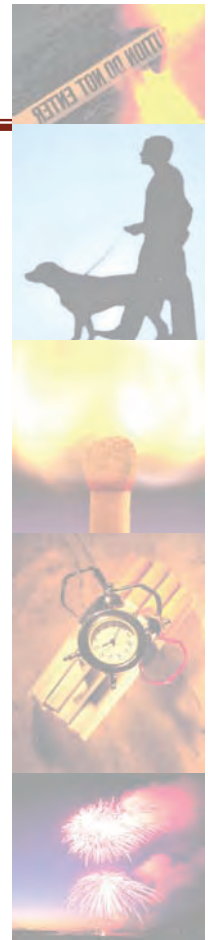


Explosives are considered Hazardous Materials, and their use is regulated by OSHA, DOT and other federal agencies. The Code of Virginia mandates the local fire official to enforce explosives related laws and to regulate their use within the County. This requires very specific training and education as well as specialized equipment with a trained force to handle both the regulatory function as well as any mitigation of emergencies or crimes involving explosives.

The Bomb Squad is a combined team between the Fire Marshal's Office and the Sheriff's Office. Each agency has five bomb technicians on the team, who have successfully completed the seven week Hazardous Device School sponsored by the FBI. **The bomb technicians duties are a collateral function that are performed in addition to their regular duties in the Fire Marshal's Office or the Sheriff's Office.**



Funding for the bomb squad comes primarily through grant funding. Much of the equipment in service today has been donated by outside agencies. Only recently has the federal government directed specific funds to bomb squads in the NCR through the Urban Area Security Initiative (UASI). The funding objective is to ensure multiple incident response capabilities for each bomb squad in the region. In 2006, a UASI grant for \$500,000 was received for the four Northern Virginia bomb squads. In 2007, a \$7.289 million UASI grant was appropriated for the eight state and local bomb squads within the NCR. A



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2008 UASI grant will provide \$5.6 million to the NCR bomb squads to further enhance bomb squad operations.

Since the formation of the squad, the squad has provided 78 responses to bomb threats and 84 actual or suspicious packages. In fiscal year 2008 the Bomb Squad responded to approximately 20 emergency response activities. In addition to emergency response, the bomb squad is responsible for the following activities:

- Maintaining situational awareness and currency on the technical library of FBI Bomb Data Center publications and other explosive-related materials.
- Maintaining professional liaison with other state and local bomb squads, military Explosive Ordnance Disposal (EOD) units, Federal agencies and professional associations.
- Assisting in the development of a National Strategic Plan for bomb preparedness.
- Grants management for specialized "first responder" equipment.
- Assisting local public and private entities in the development of emergency response plans for bomb threats and suspicious package events.
- Inspections to ensure the safe transportation, disposal or storage of explosives and other items.
- Pyrotechnic (fireworks) disposal.
- Emergency response to hostage situations in support of law enforcement special operations units.
- Providing dignitary protection and response readiness for National Response Team and National Security Special Events.
- Providing technical and operational support for local special events, such as the Polo Tournament at Morven Park in May 2008.



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CANINE

The Fire Marshal's Office utilizes three canines in order to provide enhanced investigative services for the community and the region. The canine handlers are Assistant Fire Marshal's who perform canine services as a collateral responsibility within their regular job. Each handler receives a pay stipend of 5% of their salary and is compensated for ½ hour daily for required care and handling of the canine. **In 2008, the salary cost of the canine program was approximately \$38,000. The annual operational budget is approximately \$2,000. Other operational costs are offset by sponsorships.**

The canines have demonstrated a reduction in the overall time involved in investigative activities due their ability to isolate various scents which otherwise require detailed and time consuming searches by investigative personnel. Further, a canine "hit" on a suspect material constitutes "probable cause" for the immediate issuance of a criminal search warrant, which otherwise may have to be delayed for weeks while the material undergoes a lengthy lab analysis.

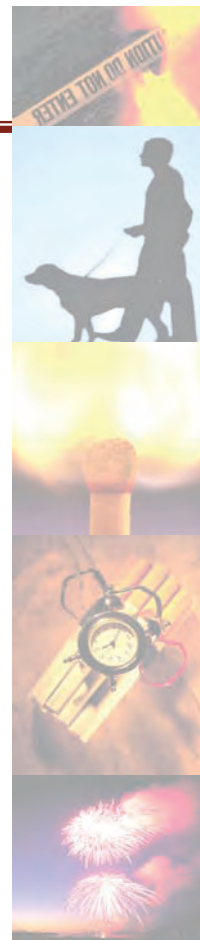
The following provides an overview of the specialized canines that are currently in use in the office:



A **Bloodhound** is used for detecting and following human scent. Human scent is unique and individual to a person, similar to fingerprints and DNA. Bloodhounds can identify and separate one human from another, and this makes them excellent for tracking a person from a fire, explosives incident or other criminal scene. Bloodhounds are also used to find missing or lost persons. Training and certification is done gratis through the Virginia Bloodhound Search and Rescue Association, utilizing protocols and methods from FEMA guidelines and the National Police Bloodhound

Association. **The program is sponsored by the Old Dominion Kennel Club, which provides 100% of the veterinary and food costs for the program.**

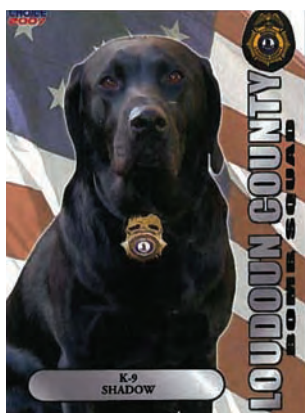
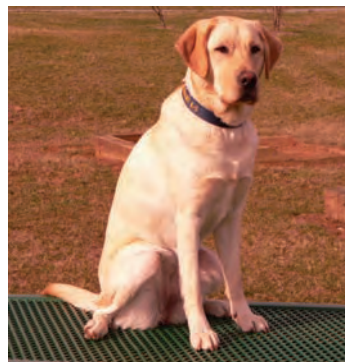
An **accelerant detection canine** is used for detecting the presence of ignitable liquids which are often used maliciously to set items on fire. Through a partnership with the BATFe, this canine was provided and trained at no cost to the County. The canine and handler successfully



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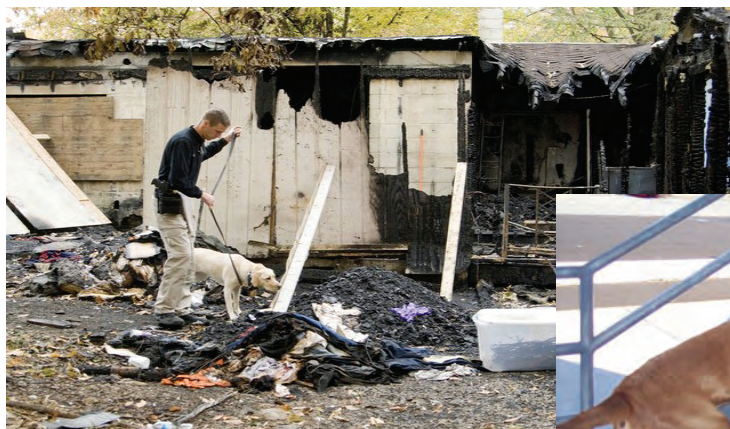
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completed a six week training program and the canine was certified to detect a wide range of ignitable liquids, to include gasoline, diesel fuel, kerosene, lighter fluid, lamp oil, torch fuel and camp fuel. Since joining the Office in March 2008, the canine has assisted in numerous fire investigations, both in Loudoun County and in mutual aid jurisdictions. To date, over 100 positive "hits" for ignitable liquids have been logged. **The program is sponsored by the Briggs Adoption Center, which provides 100% of the veterinary and food costs for the program.**



An **explosives detection canine** is used for detecting the presence of explosives and explosives components. This program is invaluable for bomb threat incidents where large buildings require a room-by-room search. In Loudoun County, this canine program has been used for explosives searches in schools and in public buildings, most notably the County Government Center. The canine and handler were trained gratis through a 14 week program sponsored by the Central Intelligence Agency (CIA). The canine is certified on an estimated

19,000 different types of explosives. **The program is sponsored by the Old Dominion Kennel Club, which provides 100% of the veterinary and food costs for the program.**



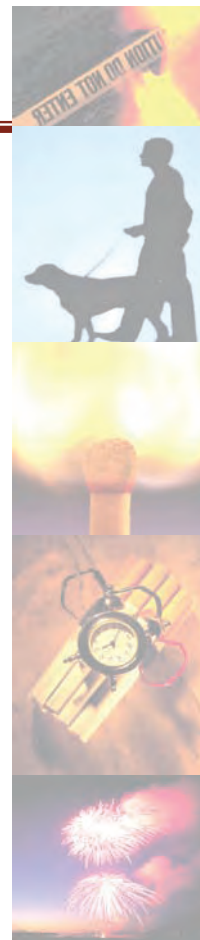
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GRANTS MANAGEMENT

The Department of Homeland Security (DHS), through its Urban Area Security Initiative (UASI) program, funds regional projects to improve "first response" capability for a wide range of emergency situations. Through a regional cooperative effort, the extreme funding needs of the eight state and local civilian (non-military) bomb squads within the National Capitol Region (NCR) were approved to acquire basic and advanced emergency response equipment. In 2006, the four Northern Virginia bomb squads were awarded a \$500,000 grant for enhanced response capabilities and, in 2007, due to continuing needs; another project was approved in the amount of \$7.289 million. This project currently provides funds for bomb squads located in:

- Loudoun County
- Fairfax County
- Arlington County
- Virginia State Police, Division 7
- Metro Transit Police
- Washington, D.C.
- Montgomery County, MD
- Prince Georges County, MD

The Fire Marshal's Office was selected by the Council of Governments (COG) Fire and Police Chiefs Committee to manage these grants. This is a significant responsibility with direct work activity in development of technical specifications, purchasing, processing and distribution of the assets provided by the grants. The Fire Marshal's Office, in conjunction with the Department of Management and Financial Services, works to ensure proper accountability and records management for all of these assets. In 2008, approximately \$3 million of first response bomb squad equipment was received and allocated.

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The National Fire Picture - 2007

There were **3,430** civilians that lost their lives as the result of fire.

There were **17,675** civilian injuries that occurred as the result of fire.

Fire killed more Americans than all natural disasters combined.

84 percent of all civilian fire deaths occurred in residences.

There were an estimated **1.6 million fires** in 2007.

Direct property loss due to fires was estimated at **\$14.6 billion**.

An estimated 32,500 intentionally set structure fires
resulted in **295 civilian deaths**.

Intentionally set structure fires resulted in an estimated **\$733 million**
in property damage.